

Appl. No.: 09/809,058
Appeal Brief dated April 27, 2005



200
AF/14

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Jonathan C. KAGLE et al.

Serial No.: 09/809,058

Filed: March 16, 2001

For: METHOD AND APPARATUS FOR
SYNCHRONIZING MULTIPLE VERSIONS
OF DIGITAL DATA

Atty. Docket No.: 003797.00023

Group Art Unit: 2178

Examiner: Schlaifer, J.

Confirmation No.: 4681

APPEAL BRIEF

U.S. Patent and Trademark Office
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Sir:

This is an Appeal Brief in accordance with 37 C.F.R. § 41.37 in support of appellants' March 2, 2005 Notice of Appeal. Appeal is taken from the Final Office Action mailed December 2, 2005, and the Advisory Action mailed March 1, 2005. Please charge any necessary fees in connection with this Appeal Brief to our Deposit Account No. 19-0733.

REAL PARTY IN INTEREST

37 C.F.R. § 41.37(c)(1)(i)

The owner of this application, and the real party in interest, is Microsoft Corporation.

RELATED APPEALS AND INTERFERENCES

37 C.F.R. § 41.37(c)(1)(ii)

There are no related appeals and interferences.

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STATUS OF CLAIMS

37 C.F.R. § 41.37(c)(1)(iii)

Claims 7-9, 22-24, 32-51 and 53 are rejected, claims 1-6, 10-21, 25-31, 52 and 54-58 are canceled. Only pending claims 7-9, 22-24, 32-51 and 53 are shown in the attached appendix.

Appellants hereby appeal the rejection of claims 7-9, 22-24, 32-51 and 53.

STATUS OF AMENDMENTS

37 C.F.R. § 41.37(c)(1)(iv)

The Amendment After Final Rejection filed January 28, 2005 which is responsive to the final Office Action of December 2, 2004, has been entered and all prior amendments have been entered. In a telephonic interview, the Examiner agreed that the rejection of claim 38 under 35 U.S.C. § 101 had been overcome by the aforementioned Amendment After Final. Interview Summary, paper no. 20050301 mailed March 7, 2005.

SUMMARY OF CLAIMED SUBJECT MATTER

37 C.F.R. § 41.37(c)(1)(v)

In making reference herein to various portions of the specification and drawings in order to explain the claimed invention, Appellants do not intend to limit the claims; all references to the specification and drawings are illustrative unless otherwise explicitly stated.

The present invention is directed to a method and apparatus for synchronizing multiple versions of multimedia objects including digital images, digital data, emails, slide presentation, schematics, operating system executables, audio, video, etc. (*Specification*, p. 1, line 2 and p. 8, lines 14-17). Multiple versions of multimedia objects may be synchronized (*Specification*, p. 17, ll. 20) or an object's history may be examined to determine whether the object has had representations that may not be compatible with its new representation (*Specification*, p. 13, ll. 13-16). For example, when images or pictures are modified or edited (*Specification*, p. 8, ll. 20-

22), particularly by different users (*Specification*, p. 9, ll. 2-3), one or more variants of the original data may result (*Specification*, p. 9, ll. 4-5). In one aspect of the present invention, a method and apparatus is provided for maintaining a history graph and descriptive metadata for each version of the multimedia object, including descriptive metadata for the transition between points on the history graph (*Specification*, p. 9, ll. 16-18).

Upon receipt, creation or modification of an image (e.g., by a digital camera or by receiving the image), a unique identifier is assigned to the image (*Specification*, p. 10, ll. 3-6). Thus, when an image is modified in any way, the resulting image is assigned a unique identifier (*Specification*, p. 10, ll. 8-10).

Additionally, metadata which describes the way in which the new image differs from the image(s) from which it was created may be associated with each unique identifier (*Specification*, p. 10, ll. 20-22). For example, metadata may include time of creation, location of the object, or description of the transformation used to derive the image from its predecessor. (*Specification*, p. 10, line 22 – p. 11, line 2).

Also, a history graph having nodes corresponding to the unique identifier may be provided. The history graph may provide a complete description of the evolution of the image. Metadata may be associated with each vector describing the transformation of the image from one node in a history graph to another so that the relationship between two images may be determined by observing their unique identifiers and history graphs (*Specification*, p. 11, ll. 13-16). Thus, two images may be considered identical if they have the same unique identifier while two images with intersecting history graphs may be considered to be related to each other (*Specification*, p. 11, ll. 16-19, FIG. 2).

As one example, a user may obtain a JPEG image having a unique identifier and convert the image into an alternate format (*Specification*, p. 14, ll. 10-13). In this example, upon creation of the alternate format image, a new graph for the image is created and added to the history of changes for that image (e.g., changing from JPEG into an alternate format) (*Specification*, p. 14, ll. 13-16). A unique identifier and metadata may be generated indicating how the image data was transformed. When the modified image is saved, all of the information for the format of the image with the metadata and the new grid may be saved (*Specification*, p. 14, ll. 16-21).

In another example of receiving an image, an image is either captured or received from another source (*Specification*, p. 16, ll. 11-12; FIG. 6). A unique identifier is generated for the image (*Specification*, p. 16, ll. 12-13, 16-17; FIG. 6). If the received image was modified, appropriate metadata describing the manipulations performed on the image is added to the data field and a history graph is created for the image and stored (*Specification*, p. 16, lines 17-21; FIG. 6). The image is stored together with its unique identifier (*Specification*, p. 16, line 21 – p. 17, line 1; FIG. 6).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL
37 C.F.R. § 41.37(c)(1)(vi)

Claims 7-9, 22-24, 32-44, 46, 48-49, 51 and 53 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of U.S. patent no. 5,535,322 to Hecht in view of U.S. patent no. 5,335,320 to Iwata et al. (“Iwata”) and U.S. patent no. 5,874,955 to Rogowitz et al. (“Rogowitz”).

Claims 45 and 47 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Hecht in view of Iwata, further in view of Rogowitz, and further in view of U.S. patent no. 5,519,865 to Kondo et al. (“Kondo”).

Claim 50 stands rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Hecht in view of Iwata, further in view of Rogowitz, and further in view of U.S. patent no. 5,781,635 to Chan et al. ("Chan").

GROUPING OF THE CLAIMS

In accordance with 37 C.F.R. § 1.192(c)(7), Appellants respectfully request that the claims not stand or fall together. Appellants request that the following groups of separately patentable claims be recognized:

GROUP I -- Independent claims 7, 22, and 32, and dependent claims 8, 9, 23, 24, 33, 36-39, 41-44, 46, 48, 49, 51, and 53.

GROUP II -- Dependent claim 34.

GROUP III -- Dependent claims 35 and 40.

GROUP IV -- Dependent claims 45 and 47.

GROUP V -- Dependent claim 50.

In accordance with 37 C.F.R. § 1.192(c)(7) - (8), separate arguments for patentability for Groups I-V are provided *infra*.

ARGUMENT

37 C.F.R. § 41.37(c)(1)(vii)

A. Group I: Claims 7-9, 22-24, 32, 33, 36-39, 41-44, 46, 48, 49, 51, and 53 are Not Obvious Under 35 U.S.C. § 103(a), over Hecht in view of Iwata and Rogowitz.

Claim 7 recites a method for synchronizing multiple versions of an object comprising receiving a multimedia object having an associated unique identifier, metadata and history; assigning a new unique identifier to the multimedia object responsive to the multimedia object

being modified; and updating the metadata and history of the multimedia object to include a node corresponding to the new unique identifier and a vector describing, via the metadata, the modification performed to arrive at the multimedia object corresponding to the new unique identifier.

Hecht discloses a method of work flow management (*Hecht*, col. 1, lines 8-11) in which a “work process” (*Hecht*, col. 2, lines 35-44) is controlled centrally to dispatch work to various services (*Hecht*, col. 2, lines 50-55). In Hecht, tax information is received from a taxpayer, and an image of the information from the taxpayer is captured (i.e., scanned) and stored (e.g., *Hecht*, col. 8, lines 34-46). The data is processed to create and store a Tax Data Record (TDR) based on the received tax information (*Hecht*, col. 8, lines 61-62). After processing is complete, the TDR is archived. Nowhere does Hecht teach or suggest assigning a new unique identifier to a multimedia object responsive to the multimedia object being modified.

The final Office Action admits that Hecht fails to teach or suggest assigning a new unique identifier to the multimedia object responsive to the multimedia object being modified but contends that it is “inherent to modification so that the modified items can be identified.” *Final Office Action*, December 2, 2004, p. 4, lines 5-7. However, the final Office Action applies an improper standard in evaluating inherency. The fact that a certain result or characteristic may occur in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981) (holding that “to establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary

skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient”) (emphasis added).

Furthermore, “in relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App & Inter. 1990) (emphasis in the original). As admitted by the final Office Action, Hecht fails to teach or suggest assigning a new unique identifier to a multimedia object responsive to the multimedia object being modified. In fact, Hecht fails to teach or suggest modification of the multimedia object at all. Even assuming *arguendo* that Hecht *might* modify a multimedia object and that Hecht *might* assign a new unique identifier responsive to the object being modified, such possibilities are still insufficient to establish inherency. The Office Action has failed to provide a basis in fact and/or technical reasoning to support the assertion that assigning a new unique identifier to a multimedia object responsive to the multimedia object being modified necessarily flows from the Hecht disclosure of scanning tax information received from a taxpayer, processing and archiving the data. Indeed, nowhere does Hecht suggest the need for modification at all and even if Hecht were to modify a multimedia object, a new unique identifier would not need to be assigned. For example, a time stamp or other history type data may be associated with the object such that the identifier remains the same. Alternatively, the modified object may replace the unmodified object and assume the identifier of the unmodified object thus obviating any need to assign a new unique identifier.

The Office Action further admits that Hecht fails to teach or suggest “updating the metadata and history of the multimedia object to include a node corresponding to the new unique identifier and a vector describing, via the metadata, the modification performed to arrive at the multimedia object corresponding to the new unique identifier” as recited in claim 7 but asserts that it would have been obvious to one of ordinary skill in the art to modify Hecht with the disclosures of Iwata or Rogowitz to arrive at the claim 7 combination of features. However, contrary to the Office Action’s assertions, there is no motivation to combine the cited references and even assuming *arguendo* that one of ordinary skill in the art would have combined the cited references, one of ordinary skill in the art would still not have arrived at the claim 7 invention.

The Office Action asserts that even though Hecht fails to teach or suggest assigning a new unique identifier to a multimedia object responsive to the multimedia object being modified, Iwata, at col. 8, lines 55-67, cures this deficiency. However, contrary to the Office Action’s assertions, Iwata fails to cure the deficiency of Hecht.

Iwata merely discloses addition of information of an element for a Graphical User Interface (GUI) to an edit manager responsive to an ADD command and setting a unique identifier for the GUI element to be added (i.e., the same GUI element). Thus, setting the unique identifier for the GUI element is not responsive to modification of a multimedia object. Indeed, setting the unique identifier for the GUI element is not responsive to modification of anything at all. Rather, the unique identifier is assigned to elements to be added (not modified elements). Merely adding a new GUI element to an edit manager and assigning the new element a unique identifier does not provide a teaching or suggestion of assigning a new unique identifier to a multimedia object responsive to the multimedia object being modified as recited in claim 7.

Likewise, Rogowitz does not cure this deficiency of Hecht and Iwata. Nor does the Office Action assert that Rogowitz cures this deficiency. Because neither Hecht and Iwata, nor Rogowitz, either alone or in combination, teach or suggest assigning a new unique identifier to the multimedia object responsive to the multimedia object being modified, the rejection is improper and should be reversed.

Additionally, the Office Action asserts that even though Hecht (or Iwata) fails to teach or suggest updating the metadata and history graph of the multimedia object to include a node corresponding to the new unique identifier and a vector describing, via the metadata, the modification performed to arrive at the multimedia object corresponding to the new unique identifier as recited in claim 7, Rogowitz (at col. 20, lines 55-65) supposedly makes up for this deficiency in both Hecht and Iwata. However, contrary to the Office Action's assertions, Rogowitz fails to cure the deficiencies in Hecht and/or Iwata.

Rogowitz discloses, at col. 20, lines 55-65, the capacity to change metadata. Although Rogowitz appears to disclose the term "metadata" in the context of "changing" (inferred to be "updating" by the Office Action), Rogowitz still fails to teach or suggest updating the history of a multimedia object. Indeed, Rogowitz fails to teach or suggest a history of a multimedia object at all. Also, Rogowitz fails to teach or suggest including a node corresponding to the new unique identifier as recited in claim 7. Moreover, Rogowitz fails to teach or suggest describing, via the metadata, the modification performed to arrive at the multimedia object corresponding to the new unique identifier. Indeed, the Office Action relies on Rogowitz solely to provide the disclosure that "metadata" may be changed, however, Rogowitz fails to teach or suggest updating the history of a multimedia object, including a node corresponding to the new unique

identifier, or describing, via the metadata, the modification performed to arrive at the multimedia object corresponding to the new unique identifier. The Office Action fails to address these deficiencies in Rogowitz. Thus, neither Hecht and Iwata, nor Rogowitz, either alone or in combination teach or suggest claim 7. The rejection should be reversed.

Also, there is no motivation to combine the Hecht, Iwata and Rogowitz as the Office Action contends. “There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

The Office Action asserts that one of ordinary skill in the art would have been motivated to modify the Hecht disclosure by incorporating the Iwata disclosure because doing so would “help manage the identity of objects.” *Final Office Action* issued December 2, 2004, page 4, line 15. Thus, the Office Action asserts that one of ordinary skill in the art would have managed work flow services by receiving tax information from a taxpayer, scanning the tax information, processing the data, then posting and archiving the data according to Hecht, then additionally modifying the tax data received from the taxpayer and assigning a new unique identifier to the modified tax data responsive to the modification of the tax data based on the disclosure of Iwata who discloses providing a Graphical User Interface (GUI) element to a GUI editor and assigning an identifier to a GUI elements added to the GUI editor. Notably, the Office Action fails to assert a motivation why one of ordinary skill in the art given the Hecht disclosure would have modified the tax data at all as set forth in the action.

The purported motivation for one of ordinary skill in the art to perform such a modification or combination, according to the Office Action, is to “help manage the identity of objects.” However, Hecht fails to teach or suggest modification of the tax data received from the taxpayer, and does not provide any disclosure of a need to additionally “manage the identity of the objects” as the final Office Action appears to contend. Also, Iwata discloses assigning a unique identifier to a GUI element to be added to a GUI editor. This disclosure does not relate to processing tax data received from a taxpayer or controlling a work flow process.

The final Office Action further asserts that one of ordinary skill in the art would have been motivated to modify the Hecht disclosure by incorporating the Rogowitz disclosure “in order to track changes in the metadata.” *Final Office Action* dated December 4, 2004, page 4, lines 21-22. However, Hecht does not disclose a need or desire to “track changes in the metadata”. Indeed, the disclosure in Hecht of managing a workflow process and storing state and other attributes of work objects does not pertain to metadata or changes to the metadata and does not provide or suggest any need or desire to “track changes in the metadata” as the final Office Action asserts. At best, the final Office Action has hunted through the prior art in an effort to find the elements without any suggestion or motivation to combine the references containing the elements, thereby engaging in impermissible hindsight. In sum, one skilled in the art would not have combined Hecht, Iwata and Rogowitz to obtain the claim 7 combination of features.

Claim 22 is directed to a computer-readable medium having computer-executable instructions for performing the same steps as recited in the method of claim 7. Thus, claim 22 is patentably distinguishable over the applied combination for the same reasons as claim 7.

Claim 32 is similar to claim 7 in calling for, among other features, responsive to the multimedia object being modified, assigning the modified multimedia object a second unique identifier; and updating the history to include a node representing the second unique identifier of the multimedia object and to associate the node representing the first unique identifier to the node representing the second unique identifier. To the extent the features of independent claim 32 are similar to claim 7, claim 32 is patentably distinguishable from the combination of Hecht, Iwata and Rogowitz for substantially the same reasons set forth above.

Claims 8, 9, 23, 24, 33, 36-39, 41-44, 46, 48, 49, 51, and 53 depend from claim 7, 22, or 32 and are patentably distinguishable from the combination of Hecht, Iwata and Rogowitz for at least substantially the same reasons set forth above.

B. Group II: Claim 34 is Not Obvious Under 35 U.S.C. § 103(a), Over Hecht in view of Iwata and Rogowitz.

Claim 34 recites all of the features of claim 32 and is patentably distinct from the combination of Hecht, Iwata and Rogowitz for the same reasons set forth above. Also, claim 34 recites that the metadata describes how the multimedia object differs from the modified multimedia object. The Office Action asserts that Hecht discloses at col. 17, lines 50-65 that the system keeps multiple versions in storage associated with the primary version for comparison and concludes that this alleged disclosure is equivalent to metadata describing how the multimedia object differs from the modified multimedia object. However, Hecht merely describes storing a previous version of a tax data record, which is not metadata. Moreover, merely storing a version of a tax data record does not provide any information as to how the tax data record differs from any other version of the tax data record. Neither Iwata nor Rogowitz remedy this defect of Hecht. As such, the combination of Hecht, Iwata and Rogowitz does not

result in the claim 34 invention where the metadata describes how the multimedia object differs from the modified multimedia object. Thus, the rejection should be reversed.

**C. Group III: Claims 35 and 40 are Not Obvious, Under 35 U.S.C. § 103(a),
Over Hecht in view of Iwata and Rogowitz.**

Claims 35 and 40 recite all of the features of claim 32 and are patentably distinct from the combination of Hecht, Iwata and Rogowitz for the same reasons set forth above with respect to claim 32. Also, claims 35 and 40 recite that the metadata describes the modification applied to the multimedia object to obtain the modified multimedia object. The Office Action asserts that Hecht discloses at col. 17, lines 50-65 that the system keeps multiple versions in storage associated with the primary version for comparison and concludes that this alleged disclosure is equivalent to metadata describing the modification applied to the multimedia object to obtain the modified multimedia object. However, Hecht merely describes storing a previous version of a tax data record, which is not metadata. Moreover, merely storing a version of a tax data record, even assuming *arguendo* that one of ordinary skill in the art assumed the tax data record to be “metadata,” does not describe the modification applied to the tax data record to obtain a modified tax data record. Neither Iwata nor Rogowitz remedy this further defect of Hecht. As such, the combination of Hecht, Iwata and Rogowitz does not result in the invention of claim 35 or claim 40. Thus, the rejection should be reversed.

**D. Group IV: Claims 45 and 47 are Not Obvious, Under 35 U.S.C. § 103(a),
Over Hecht in view of Iwata and Rogowitz and further in view of Kondo.**

Claims 45 and 47 recite all of the features of claim 32 and are patentably distinct from the combination of Hecht, Iwata and Rogowitz for the same reasons set forth above with respect to claim 32. Also, claims 45 and 47 recite that only the recent history is stored with the modified

multimedia object. The Office Action admits that none of Hecht, Iwata, or Rogowitz teaches or suggests that only the recent history is stored with the modified multimedia object. To remedy this defect, the Action relies on Kondo at col. 6, lines 5-35. However, Kondo fails to cure the deficiencies of Hecht, Iwata and Rogowitz as the Office Action contends.

Kondo discloses a method for retrieving files from a database. A user enters commands into the system (Kondo, col. 5, lines 57-60) which may generate conditions for retrieving a group of files from the database (Kondo, col. 6, lines 14-17). The retrieval conditions are stored (Kondo, col. 6, lines 18-19) and are subsequently displayed if the CALL HISTORY button 21c is clicked (Kondo, col. 6, lines 22-25). Based on the retrieval conditions, a group of files is displayed to a “notice group” (Kondo, col. 6, lines 26-27). At the time of the updated display of the retrieved group of files, the selected retrieval condition is “stored as the most recent history information” (Kondo, col. 6, lines 28-31). Hence, contrary to the Office Action’s assertions, Kondo fails to teach or suggest that only the recent history is stored with the modified multimedia object. Kondo fails to teach or suggest a modified multimedia object at all. Rather, Kondo discloses retrieving a group of files (not modifying them) based on a retrieval condition, displaying the retrieved group of files to a “notice group” and storing the selected retrieval condition.

Moreover, there is no motivation to modify the combination of Hecht, Iwata and Rogowitz with Kondo. The Office Action asserts that the motivation (to combine these references) is “to use selective storage of recent history” to “provide the user with access to more relevant history information.” *Final Office Action* dated December 4, 2004, page 9, line 23 – page 10, line 2. The Office Action’s contention is illogical because a user provided with all

relevant history information would not have had any less access to “more relevant history information” as compared to a user provided with only “recent history.” In other words, one possessing all relevant history information who desired “more relevant history information” would not have been motivated to limit access to only “recent history” and forego access to all other history information. Indeed, restricting access to history information would only serve to provide *less* relevant history information. As such, one skilled in the art would not have been motivated to combine Kondo with Hecht, Iwata and Rogowitz as alleged. Thus, the rejection should be reversed.

E. Group V: Claim 50 is Not Obvious, Under 35 U.S.C. § 103(a), Over Hecht in view of Iwata and Rogowitz and further in view of Chan.

Claim 50 recites all of the features of claim 32 and is patentably distinct from the combination of Hecht, Iwata and Rogowitz for the same reasons set forth above with respect to claim 32. Also, claim 50 recites generating the second unique identifier by one of hashing and cyclic redundancy checking of data representing the modified multimedia object. The Office Action admits that the combination of Hecht, Iwata and Rogowitz fails to teach or suggest generating the second unique identifier by one of hashing and cyclic redundancy checking of data representing the modified multimedia object. To remedy this defect, the Office Action relies on Chan at col. 2, lines 60-67. However, contrary to the Office Action’s assertions, Chan fails to cure the deficiencies of Hecht, Iwata and Rogowitz.

Chan discloses at col. 2, lines 60-67 that generating an identifier for a digital message by a one-way hash function. However, Chan fails to teach or suggest generating a unique identifier for a modified multimedia object. The Office Action asserts that “using hashing” is “an accepted part of using digital signature.” *Final Office Action* dated December 4, 2004, page 10, lines 17-

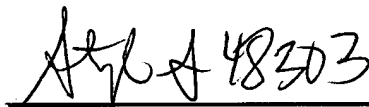

18. Nonetheless even assuming this contention to be true, it does not logically follow that "using hashing" is therefore an "accepted part" of a modified multimedia object. For at least this reason, the combination of Hecht, Iwata, Rogowitz and Chan does not result in the claim 50 invention. Thus, the rejection should be reversed.

CONCLUSION

For all of the foregoing reasons, Appellants respectfully submit that the final rejection of claims 7-9, 22-24, 32-51 and 53 is improper and should be reversed.

Respectfully submitted,
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CLAIMS APPENDIX

37 C.F.R. § 41.37(c)(1)(viii)

7. A method for synchronizing multiple versions of an object, comprising:
receiving a multimedia object having an associated unique identifier, metadata and history;
assigning a new unique identifier to the multimedia object responsive to the multimedia object being modified;
updating the metadata and history of the multimedia object to include a node corresponding to the new unique identifier and a vector describing, via the metadata, the modification performed to arrive at the multimedia object corresponding to the new unique identifier.
8. The method according to claim 7, further comprising:
storing the associated unique identifier, the new unique identifier, the metadata and the history.
9. The method according to claim 8, further comprising:
tracking the history of the multimedia object via the associated unique identifier, the new unique identifier, the metadata and the history.
22. A computer-readable medium having computer-executable instructions for performing the steps of:
receiving a multimedia object having an associated unique identifier, metadata and history;
assigning a new unique identifier to the multimedia object responsive to the multimedia object being modified;
updating the metadata and history of the multimedia object to include a node corresponding to the new unique identifier and a vector describing, via the metadata, the modification performed to arrive at the multimedia object corresponding to the new unique identifier.

23. The computer-readable medium according to claim 22, having further computer-executable instructions for performing the steps of:

storing the associated unique identifier, the new unique identifier, the metadata and the history.

24. The computer-readable medium according to claim 23, having further computer-executable instructions for performing the steps of:

tracking the history of the multimedia object via the associated unique identifier, the new unique identifier, the metadata and the history.

32. A method for synchronizing multiple versions of an object, comprising:

assigning a multimedia object a first unique identifier;

providing the multimedia object a history having a node representing the first unique identifier of the multimedia object;

responsive to the multimedia object being modified, assigning the modified multimedia object a second unique identifier; and

updating the history to include a node representing the second unique identifier of the multimedia object and to associate the node representing the first unique identifier to the node representing the second unique identifier.

33. The method according to claim 32, further comprising associating metadata with the modified multimedia object.

34. The method according to claim 33, wherein the metadata describes how the multimedia object differs from the modified multimedia object.

35. The method according to claim 33, wherein the metadata describes the modification applied to the multimedia object to obtain the modified multimedia object.

36. The method according to claim 32, further comprising storing the first and second unique identifiers in a database separate from the multimedia object and the modified multimedia object.

37. The method according to claim 32, further comprising storing the first and second unique identifiers with the multimedia object and the modified multimedia object, respectively.
38. An operating system stored on a computer-readable medium having computer-executable instructions for performing the steps of the method of claim 32.
39. The method according to claim 32, wherein updating the history includes creating a vector that describes the relationship between the multimedia object associated with the first unique identifier and the modified multimedia object associated with the second unique identifier.
40. The method according to claim 39, further comprising associating metadata with the vector, the metadata describing the modification applied to the multimedia object to obtain the modified multimedia object.
41. The method according to claim 32, further comprising receiving the multimedia object prior to assigning the first unique identifier to the multimedia object.
42. The method according to claim 32, wherein the multimedia object is an image.
43. The method according to claim 42, wherein the history represents evolution of the image.
44. The method according to claim 32, further comprising storing portions of the history with the modified multimedia object.
45. The method according to claim 44, wherein only the recent history is stored with the modified multimedia object.
46. The method according to claim 32, further comprising transferring the history with the modified multimedia object.
47. The method according to claim 46, wherein only the recent history is transferred with the modified multimedia object.

48. The method according to claim 32, further comprising providing an application program interface for other software to retrieve or store the multimedia object or the modified multimedia object.

49. The method according to claim 48, wherein the application program interface is configured to receive metadata associated with the multimedia object or the modified multimedia object.

50. The method according to claim 32, wherein assigning the modified multimedia object a second unique identifier includes generating the second unique identifier by one of hashing and cyclic redundancy checking of data representing the modified multimedia object.

51. The method according to claim 32, further comprising associating the updated history with the modified multimedia object.

53. A computer readable medium having computer executable instructions stored for performing the method of claim 32.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
for FY 2005

Complete if Known

Application Number	09/809,058
Filing Date	March 16, 2001
First Named Inventor	Jonathan C. Kagle et al.
Examiner Name	M. Schlaifer
Art Unit	2178
Attorney Docket No.	003797.00023

☐ Applicant claims small entity status. See 37 CFR 1.15.

TOTAL AMOUNT OF PAYMENT (\$) 500

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) : _____

☒ Deposit Account Deposit Account Number: 19-0733 Deposit Account Name: Banner & Witcoff, LTD.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

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Under 37 CFR 1.16 and 1.17

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee(\$)	Fee(\$)	Small Entity Fee(\$)	Fee(\$)	Small Entity Fee(\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Small Entity Fee (\$)	Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims _____ **Extra Claims** _____ **Fee(\$)** _____ **Fee Paid (\$)** _____

_____ - 20 or HP = _____ X _____ = _____

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims _____ **Extra Claims** _____ **Fee(\$)** _____ **Fee Paid (\$)** _____

_____ - 3 or HP = _____ X _____ = _____

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____	_____	_____ / 50 = _____ (round up to a whole number) x	_____	_____

4. OTHER FEE(S)

	Fees Paid (\$)
Non-English Specification, \$130 fee (no small entity discount)	
Other (e.g., late filing surcharge): Appeal Brief	500

SUBMITTED BY

Signature	Registration No. 35,509	Telephone 202-824-3000
Name (Print/Type) Gary D. Fedorochko	(Attorney/Agent)	Date April 27, 2005

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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